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BUREAU OF ENTOMOLOGY
PROCEEDINGS
OF THE
PACIFIC COAST ENTOMOLOGICAL SOCIETY

EB 29 1929
RECEIVED

Vol. 2

1927-1928

No. 7

ONE HUNDRED AND TENTH MEETING

The one hundred and tenth and Annual Meeting of the Pacific Coast Entomological Society was held on Saturday evening, September 3, 1927, in the offices of the California State Department of Agriculture, Room 10, Ferry Building, San Francisco at eight o'clock. Seven officers and members were present as follows: President E. C. Van Dyke, Dr. F. E. Blaisdell, E. P. Van Duzee, Dudley Moulton, James E. Cottle, George R. Wilson, Hartford Keifer, R. E. Barrett and J. O. Martin, Secretary. Walter Ebeling of Berkeley and James Meenwenberg of San Francisco, were present as visitors.

The minutes of two previous meetings and the treasurer's report were read and approved.

President Van Dyke then gave a brief account of the entomological happenings of the past summer. He reported the departure of our fellow member, C. L. Fox, for his home in England, owing to ill health, and mentioned the illness of H. C. Fall, and Prof. J. H. Comstock. He also reported the death of Dean Baker of the College of Agriculture of the Philippines and gave other items of interest concerning the whereabouts of various entomologists.

Hartford Keifer then gave a report of his trip through the high Sierra, and the following observations on *Mnemonica cyanosparsella*, with an exhibition of the species and its work:

Since the discovery of *Mnemonica cyanosparsella* in Mill Valley by F. X. Williams in March, 1905, and its subsequent description in the *Entomological News* of 1908, nothing has been recorded, to my knowledge, of this insect until I published a note concerning its food plant in the *Pan-Pacific Entomologist* of 1927. This species is of interest in belonging to a structurally peculiar group of the Lepidoptera.

We are all familiar with the great suborder Heteroneura in which the hind wings differ from the forewings, typically joining onto the forewings by a frenulum, and in which the adults are entirely without functional mandibles. The insect in question belongs to the suborder Homoneura which, though widespread, is poor in species, some of which have at various times been classed

with the Trichoptera. This suborder has the fore and hind wings nearly alike, the forewing joining onto the hind wing, and tending to have more or less functional mandibles in the adult.

On March 31 and April, of 1926, a coast live-oak (*Quercus agrifolia*) was observed to have a heavy infestation of a leaf miner. Several leaves taken into the laboratory produced larvæ in a day or two which dropped to the bottom of the jar. These larvæ were white with blackish heads. On putting them on sand they immediately burrowed into it and spun small whitish cocoons. As nothing emerged the jar was set aside during the summer and not noted again until early winter when I had reason to suspect they were of the Micropterygidae. Soon after moistening the sand adults began to emerge proving the species to be that named above. The emergence was early due to the warmth of the laboratory, from the middle of December over into January.

It was calculated that adults could be obtained by watching the appearance of the new spring oak leaves in the location where the mines were noted. Though cloudy and cool, weather seemed to be favorable. On March 28 and 29, 1927, upon disturbing the branches a number of adults were taken on the wing.

Eggs and larvae of this species were found by April 6 in the new leaves. The eggs in every case noted had been forced into the leaf from the lower side making a conspicuous brown spot, visible above and below. Very young and little expanded leaves were more often chosen, having from three to eight eggs in each, with few or no eggs in the nearly mature leaves at this time. These leaves expanded considerably while the larvæ were growing but were often hardly able to support those they contained. A few larvæ were hatching at this date, showing a rapid embryonic development; they mined into the leaf from the opposite side of the puncture. This mine is at first linear but soon expands into a blotch, that part of the leaf about the eggshell apparently contracting due to expansion of growth causing more or less of a rent. All the tissue between the upper and lower epidermis is eaten away, often producing a bag-like appearance.

Some mature larvæ were noted April 14, others, however, maturing on into early May. The length of larval life is estimated at about three weeks though no definite time has yet been worked out for this species.

In common with *M. auricyanea* Wals. this insect has large crossed mandibles when in the pupal stage. Their use is assumed to be that described for the above species by Busck and Boving (*Proc. Ent. Soc. Wash.*, 1914), namely, to tear open the cocoon and assist in burrowing to the surface. These mandibles are shed with the pupal skin, leaving only small mandibles with the adult. This pupa has all the bodily appendages free and is exceedingly mobile.

The location where these mines were found so plentifully is

on the north side of a small hill which is heavily shaded by large pine and cypress trees, while the oak trees struggle to live on what little sunlight comes through. Mines noted in other places were all on the more shaded parts of the trees where the leaves were more tender and the ground more moist. They have been found throughout Golden Gate Park, San Francisco, and in a number of places in Marin County.

We have all heard that this year has had a late season. Data which I have on this species up to the present are as follows: March 31 and April 1, 1926, mature larvae ready to enter the ground, the brood apparently all at about the same stage of development; April 14, 1927, first mature larvae noted and on May 2, 1927, not all were yet out of the leaves.

Dr. Blaisdell followed with a report of his intensive studies of the minute Coleoptera obtained by sifting within the confines of two dooryards, one in Santa Paula, the other in Vine Hill, Contra Costa County, California. He found a surprisingly large number of minute beetles, many of them rare and others quite new to his collecting experience.

Dudley Moulton followed with an account of his studies of the Thysanoptera. Mentioning the species of economic importance of the year, he told of the Orange Thrips, *Euthrips citri*, which did considerable damage in some places, injuring the leaves and scabbing the fruit. During the last two years, he stated, a new grape pest has appeared in *Drepanothrips reuteri*, which in some instances produced great damage, scarring every grape in a bunch. This grape pest was bad in the Santa Clara Valley and was also reported as destructive in the Fresno district. The Pear Thrips was also reported as bad in some localities during the past season. Mr. Moulton regretted the lack of uniformity in the descriptions of Thrips, which has burdened the literature of his group with synonyms. He also gave an account of the interesting gall-making Thrips of Australia and the Pacific Islands and showed examples of the remarkable leaf galls produced by several of the species. In reply to a question regarding distribution, he stated that at present there are about ten species which are cosmopolitan. Various species were exhibited under the microscope representing typical genera. Mr. Moulton also gave an account of his filing system, both for specimens and references.

George R. Wilson reported the fact that the Alfalfa Weevil had established itself at Doyle and Beckwith in eastern California.

Mr. Van Duzee gave an account of his collecting experiences on his trip to Truckee, Reno and Pyramid Lake, stating that owing to the late spring and cold weather, the collecting had not been as productive as usual.

R. E. Barrett told of his trip to the Colorado and Mojave deserts and described the flight at dusk of a species of Thyce.

Mr. Cottle gave an account of his summer's collecting in various parts of the Sierra, and of many interesting and amusing experiences.

J. O. Martin gave an account of his trip to the Big Bend section of Texas, where owing to the cold and drought, his trip was a disappointment.

Dr. Van Dyke reported on his trip to Washington, Oregon and Idaho. At Cannon Beach, Oregon, he found the European earwig very numerous, also the strawberry weevil. On Mount Hood he noted that comparatively slight changes in altitude produced marked changes in the faunal types.

The meeting then adjourned.

J. O. MARTIN, Secretary.

ONE HUNDRED AND ELEVENTH MEETING

The one hundred and eleventh meeting of the Society was held on Saturday evening, December 3, 1927, in Room 10 of the State Department of Agriculture, in the Ferry Building, San Francisco, California.

President E. C. Van Dyke in the chair; minutes of the last meeting were read and approved; also the Treasurer's report. A special report of the treasurer of the *Pan-Pacific Entomologist* was also read.

The following officers and members were present: President E. C. Van Dyke, Professor G. F. Ferris, Professor R. W. Doane, Mr. E. P. Van Duzee, Mr. Dudley Moulton, Dr. H. E. Burke, Mr. E. R. Leach, Mr. Eric Walther, Mr. George R. Wilson, Mr. Grant V. Wallace, Mr. Hartford Keifer and J. O. Martin, Secretary.

Visitors were present as follows: Mrs. Grant V. Wallace, Mr. F. P. Keen, Mr. Graham Heid, Mr. H. R. Hagan, Mr. John B. Steinweder, Mr. George R. Struble, Mr. Gorton Linsley, Mr. Robert Usinger, Mr. Peter C. Ting, Mr. A. M. Adamson and Mr. I. H. De Leon.

Election of officers for the current year was then taken up and President Van Dyke appointed Mr. E. R. Leach, Mr. Hartford Keifer and Mr. Grant Wallace committee on nomination.

The following names were proposed as new members of the Society: Mr. F. H. Wymore, Mr. F. P. Keen, Mr. Graham Heid, Mr. George R. Struble, Mr. Robert Usinger, Mr. John B. Steinweder and Mr. Gorton Linsley. The vote as to their election was unanimous and their names were entered on the membership roll.

Mr. Dudley Moulton, assisted by Mr. Eric Walther, then gave an exhibition of the newer methods of microscopic projection, throwing on a screen some views of the typical genera of Thrips. He also showed specimens of an Australian gall-making Thrips and also a species from New Jersey on a fungus. Mr. Moulton also gave a demonstration of the dark center stop for the examination of opaque objects under the microscope.

Professor Ferris exhibited a curious, fringed, larva-like insect taken by one of his students. Attempts to rear these insects to maturity had thus far failed. The consensus of opinion, after a discussion of this insect, was that its relationship was Neuroptoid rather than to the Coleoptera.

Mr. Martin exhibited specimens of the rare Histerid beetle, *Onthophilus lecontei* Horn which he had just found in the collection of Mr. L. S. Slevin, lately presented to the California Academy of Sciences. This collection, he reported, added some very good species to the Academy's collection as well as additions to series already there.

A question by Dr. Burke as to the standing of species of

beetles recognized by systemists as distinct, but which were found to interbreed, was discussed with the conclusion that the fact of their interbreeding did not necessarily affect their specific standing.

The general topic of winter collecting was then started by Mr. Van Duzee, who gave an account of his winter collecting of moths at Mill Valley in Marin County. Over one hundred and fifty species he reported were taken at light, many of them rare and some unique. Damp and cloudy weather he found to be the best condition and even light rain did not prevent flights. Mr. Van Duzee also made some remarks concerning the newly published Check List of the Moths of British Columbia.

Mr. E. R. Leach then spoke briefly of his experiences of winter collecting in Mendocino County, where he obtained many desirable species not to be had at any other season. He thought that the best of the winter collecting, however, occurred in February.

The collecting of forest insects during the winter was discussed by Dr. Burke, who thought the winter months much the best time to do such collecting. Most of the Cerambycids and many of the Buprestids can be dug from their burrows where they may then be found in the adult stage having undergone their metamorphosis in the fall.

Dr. Van Dyke agreed with Dr. Burke and called attention to the Meloid beetles which are to be found during the winter months under stones and other shelters. He also mentioned the beetles of the genera *Pleocoma* and *Hetærius* which are to be taken only during the winter months, the latter then coming to the surface at this time to escape the cold and dampness of the ants' underground galleries.

Mr. F. P. Keen made a few remarks concerning a forthcoming trip to the San Bernardino Mountains to study the insects depredating on the Pinyon Pine, which is being greatly damaged in that locality.

Mr. Martin told of his experiences in collecting during the extreme cold of the Eastern winters and of the large numbers of insects to be found under bark and even on the surface of the snow.

Mr. H. R. Hagan spoke of some winter collecting that he experienced in a cave in Utah where a cigar box full of insects of various orders was taken. He also recounted the finding of large masses of grasshopper eggs and adult hoppers under the snow, the latter alive and breathing. He also spoke of seeing great numbers of *Collembola* on the snow.

Dr. Burke told of some laboratory experiments he had made on the resistance of insects to cold, where he found that at minus ten degrees Fahrenheit death resulted. He thought that it did not get as cold as that under bark of trees or under snow where insects hibernate.

Mr. Grant Wallace asked for information as to the killing agent in such insect-destroying agencies as Flit, and Dr. Van Dyke said that it was no doubt largely gasoline.

The committee for nomination of officers of the year was then called for by Dr. Van Dyke and they proposed the names of Dr. E. C. Van Dyke, President; Professor G. R. Ferris, Vice-President, and Mr. J. O. Martin, Secretary and Treasurer. The nominations being seconded, these officers were unanimously re-elected.

There being no further business to come before the meeting, Dr. Van Dyke declared it adjourned.

J. O. MARTIN, Secretary.

ONE HUNDRED AND TWELFTH MEETING

The one hundred and twelfth meeting of the Pacific Coast Entomological Society was held on Saturday evening, March 3, 1928, in the office of the State Department of Agriculture, Room 10, Ferry Building, San Francisco, California.

President Van Dyke in the chair. Minutes of the last meeting and the Treasurer's report were read and approved.

The following officers and members were present: President E. C. Van Dyke, Vice-President G. F. Ferris, Mr. J. C. Chamberlin, Dr. F. E. Blaisdell, Mrs. F. E. Blaisdell, Mr. Carl Duncan, Mr. E. P. Van Duzee, Mr. Grant V. Wallace, Mr. Dudley Moulton, Mr. Eric Walther, Mr. George R. Wilson, Mr. John F. Curry, Mr. Graham Heid, Mr. E. R. Leach, Mr. Gorton Linsley, Dr. H. E. Burke, Mr. Robert Usinger, Mr. F. P. Keen, Mr. W. D. Reed, and J. O. Martin, Secretary.

Visitors present were Mr. Guy L. Brown of Oakland, Calif.; Mr. J. C. Chamberlin of Corvallis, Oregon; Mr. I. Simmons of Fresno, Calif., and Mr. I. H. De Leon of Berkeley, Calif.

Mr. Martin read a letter from the Secretary of the Pacific Division of the American Association for the Advancement of Science giving the date and place of meeting of the Association. It was decided as none of our members expected to be present, to leave the representation of the Society to Dr. John A. Comstock of Los Angeles, and to hold the meeting of the Pacific Coast Entomological Society in conjunction with that of the Lorquin Society of Los Angeles.

Dr. Van Dyke gave notice of the International Entomological Congress to be held in Ithaca, N. Y., and said that several of our members expected to be present, which will give the society a good representation at that meeting.

Dr. Van Dyke also brought up the subject of the Annual Field Meeting of the Society and asked for suggestions as to places where it might be held. Mr. Grant V. Wallace suggested the region at the eastern base of Mt. Diablo; but it was decided by discussion that without sufficient transportation it would be too difficult to reach. Professor Ferris suggested meeting at Stanford University Campus and mentioned a desirable location west of the campus. After discussion of this locality, which seemed to be acceptable to all, Dr. Van Dyke appointed Professor Ferris, Mr. Joseph Chamberlin, Mr. Carl Duncan and Mr. Grant V. Wallace a committee to arrange the date and details of this event and to report them to the Secretary.

Dr. Van Dyke gave a short report of a meeting of the Publication Committee of the *Pan-Pacific Entomologist* held this afternoon at the California Academy of Sciences and stated that arrangements had been made to continue the publication of this magazine.

Mr. E. P. Van Duzee exhibited a box of moths of the genus

Papaipema containing eighteen species recently presented to the California Academy of Sciences by Mr. Henry Bird of Rye, N. Y. This gift, Mr. Van Duzee said, increases the Academy's collection to thirty-one species of this genus. He also said that Mr. Bird hoped that some entomologist on the coast would take up the study and collecting of these moths which bore in the roots and stems of a variety of plants, and, as the adults are not attracted to lights or baits, are not often taken.

Dr. Van Dyke remarked that during his visit to the east he saw the collection of Mr. Bird, which was very finely mounted. He said that Mr. Bird was a pioneer in the study of this group.

Mr. Carl D. Duncan requested the members when out collecting to be on the lookout for hibernating wasps of the genus *Vespa*, as he knew the habits of but one species in regard to hibernation.

Mr. J. C. Chamberlin asked the coleopterists to be on the lookout for Pseudoscorpions under the wings of beetles, as in his studies he had lately found them in such a position.

Dr. F. E. Blaisdell gave a very interesting account of his recent trip to Santa Paula, the Imperial Valley, San Diego, and Los Angeles. Most of his collecting was done by sifting, as it was cold and rained much of the time. He noted the habits of a *Cryptoglossa*, a large Tenebrionid beetle, which soon after the break of day began to bury itself, gradually going deeper, and he told of the futile attempts of a large desert scorpion to sting these heavily armoured beetles. Dr. Blaisdell regretted the disappearance of many of his former collecting localities at San Diego due to building, and told of a visit to the La Brea fossil beds in company with Mr. W. S. Blatchley. At El Centro he collected, by sifting, three specimens of a curious blind beetle apparently undescribed.

Professor Ferris reported that the curious larvæ shown at a previous meeting were some of them still alive, having, however, eaten nothing in the meantime. He also discussed the possibility of classifying the nymphs of the Psyllidæ, and gave an account of a remarkable gall-producing species which made a partly open gall, the aperture of which it closed with the highly chitenized anal parts of its body.

Mr. Dudley Moulton exhibited a very fine series of photomicrographs of thrips and made some remarks on differences and distribution. Mr. Moulton spoke very highly of the photographic work of Mr. Eric Walther, his assistant, whose work these pictures were.

Mr. F. P. Keen reported a visit to the Torrey Pines near La Jolla, which he examined for insects and which he found were fairly free from injurious pests. He concluded from this fact that these pines, which were formerly widely distributed, owed their extermination to climatic conditions rather than to insect enemies.

Mr. W. J. Chamberlin asked the members for any interesting notes concerning the Buprestidæ, as he was making a special study of that family.

Mr. W. D. Reed introduced Mr. Simmons of the Fresno Dried Fruit Laboratory, who exhibited photographs of a bee belonging to the genus *Megachile*, which he found hibernating in the interior of figs.

Mr. George R. Wilson gave a brief account of his recent trip to Florida, and some of his impressions of that state.

Dr. H. E. Burke then discussed the subject Should Insect Varieties Receive a Scientific Name? with the following remarks:

At the present time there is considerable confusion in entomological nomenclature in regard to trinomial names. Sometimes these are supposed to be subspecies, sometimes differently marked color or seasonal varieties.

Ornithologists and mammalogists use the term subspecies for a definite taxonomic concept, usually a distinct geographical race of a species which intergrades with other subspecies in other localities to form the species.

Entomologists are giving trinomial names to at least six different classes or forms of insects.

First is the true geographical subspecies as considered such by the ornithologists and mammalogists. An example is *Buprestis lineata* (Fab.) of the east living in pine. The true *lineata* is marked by two rather narrow brick red vittæ on each elytron and occurs along the Atlantic Coast from the West Indies to Canada. The subspecies *davisi* N. & W. has broader confluent vittæ and occurs in a few localities in Florida.

Second is the case, also geographical but with elevation and a different food plant entering, of *Trachykele blondeli* Mars. and *T. blondeli juniperi* Burke. *T. blondeli* occurs along the Pacific Coast in cypress and giant arborvitæ, *T. b. juniperi* at high elevations in the Sierra in juniper. *T. juniperi* is more delicate and brighter colored than *T. blondeli*.

Third is the codling moth, *Carpocapsa pomonella* Linn., and the lighter variety, *C. pomonella simpsoni* (Busch). *Simpsoni* always occurs with true *pomonella*, but does not intergrade with it. *Simpsoni* undoubtedly comes from *pomonella* parents.

Fourth is the buprestid, *Buprestis striata* (Fab.) and *B. striata impedita* Say. *Impedita* occurs in the same pine tree with *striata* and intergrades with it. *Striata* is bronze and *impedita* green. Apparently both *striata* and *impedita* may have either *striata* or *impedita* parents.

Fifth is the buprestid, *Acmaeodera sinuata* Van D. and *A. sinuata sex-notata* Van. D. *Sex-notata* usually occurs in the same Ceanothus wood with *sinuata*. Each elytron, instead of being marked with a light vitta, is marked by three circular spots. There

are intergradations. Undoubtedly both may have the same parents.

The sixth case is one of seasonal variation. An example is the butterfly *Papilio (Iphidicles) ajax* Linn. which has three different distinguishable seasonable forms, named *ajax* Linn.; *telenomides* Feld. and *marcellus* Boisd. & Lec. All are descendants of each other, either children or grandchildren.

In the opinion of the speaker, the first two cases correspond with the subspecies of the ornithologist and the mammalogist. They are definite taxonomic concepts and should receive names. The last four cases we consider descendants of the same parents or grandparents, and such varieties or forms should not receive names. They should, however, be mentioned in the description of the species. Where they have received names, these names should be considered synonyms.

Dr. Burke's remarks produced considerable discussion from many of the members, at the close of which the meeting adjourned.

J. O. MARTIN, Secretary.

ONE HUNDRED AND THIRTEENTH MEETING

The one hundred and thirteenth, or Annual Field Meeting of the Society was held on April 29, at Palo Alto in the hills west of the Stanford University Campus. The following officers and members were present:

President E. C. Van Dyke, Mrs. E. C. Van Dyke, Mr. E. P. Van Duzee, Mrs. E. P. Van Duzee, Mr. Dudley Moulton, Mr. Grant V. Wallace, Mr. Gorton Linsley, Mr. Robert Usinger, Professor Lawrence Bruner, Professor R. W. Doane, Mr. Graham Heid, Dr. H. E. Burke, Mr. John B. Steinweder, Mr. George R. Struble and J. O. Martin, Secretary.

The following guests were also present:

Miss K. Ames, Miss A. Smith, Mr. and Mrs. H. C. Usinger, Master Russel Usinger, Mrs. Grant V. Wallace, Mr. and Mrs. W. J. Chamberlin, Professor A. G. Vestal, Mrs. C. Hubbs, Mrs. H. E. Burke, Mr. and Mrs. H. G. Barber, Mrs. R. W. Doane.

Many of the members came in their own cars and those who came on the train or otherwise were given transportation to the picnic place by the others. After a pleasant picnic luncheon most of the members and their guests spent some hours in collecting.

J. O. MARTIN, Secretary.